

misleading because of some limitations of the study.

The authors did not exclude from their analysis patients for whom there was an explainable delay in the diagnosis of ST-segment elevation myocardial infarction. Some patients with suspected aortic dissection or pulmonary embolism may have undergone additional investigation prior to receiving reperfusion therapy. Also, it is not clear whether the authors excluded patients whose initial electrocardiogram was not diagnostic. A sizable number of patients with acute coronary syndromes may develop clear ST-segment elevation only after a follow-up electrocardiogram is done while they are under observation in the emergency department. Patients with a delayed diagnosis or a contraindication to thrombolytic therapy, or who need cardiopulmonary resuscitation, intubation or defibrillation, may be more likely to receive primary percutaneous coronary intervention. These patients are expected to have longer delays to reperfusion therapy. In particular, it appears that patients transferred from distant hospitals for primary percutaneous coronary intervention because of contraindications to thrombolytic therapy were included in the analysis.

Also, the authors do not clarify whether they included patients referred for rescue percutaneous coronary intervention. The data for these patients would obviously have increased the calculated delays to reperfusion therapy for transferred patients.

Door-to-balloon time is not always the best indicator of treatment delays. In our institution, we use door-to-open-artery time to measure treatment delays. As many as 29% of patients with ST-segment elevation will have thrombolysis in myocardial infarction (TIMI) scores of 2 or 3 for flow in the culprit vessel when the first coronary angiogram is done.<sup>2</sup> In these patients, the operator may choose to take time to perform a ventriculogram and additional coronary views, administer additional medications or use a thrombus extraction catheter before performing coronary angioplasty. In these patients, door-to-open-artery time provides a

better indication of delays to reperfusion therapy.

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#### REFERENCES

1. Huynh T, O'Loughlin J, Joseph L, et al; AMI-QUEBEC Study Investigators. Delays to reperfusion therapy in acute ST-segment elevation myocardial infarction: results from the AMI-QUEBEC Study. *CMAJ* 2006;175(12):1527-32.
2. Godicke J, Flather M, Noc M, et al. Early versus periprocedural administration of abciximab for primary angioplasty: a pooled analysis of 6 studies. *Am Heart J* 2005;150(5):1015.

**Competing interests:** Dr. Dery holds a research grant from Eli Lilly.

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#### [Four of the authors respond:]

We thank Jean-Pierre Dery and Robert DeLarochellière for their comments. Although only 8% of patients who underwent primary percutaneous coronary intervention after interhospital transfer were treated within the recommended time in our study, 36% of those treated on site received therapy within the recommended time.<sup>1</sup> Therefore, at least in this latter group, the time to primary percutaneous coronary intervention exceeded recommendations in many (but not most) patients.

To address Dery and DeLarochellière's concerns that inclusion of particular groups of patients may increase time delays to primary percutaneous coronary intervention, we undertook sensitivity analyses in which we excluded the following groups: patients who present with atypical symptoms (e.g., patients who may have aortic dissection and pulmonary embolism), patients with initial electrocardiograms that are nondiagnostic, patients with contraindications to fibrinolytic therapy and patients who required intubation and cardiopulmonary resuscitation for stabilization. The time to primary percutaneous coronary intervention remained prolonged even after exclusion of these patients (Table 1).

Dery and DeLarochellière were also concerned that we may have included patients who underwent rescue percutaneous coronary intervention. As the objective of our study was to measure time delays to initial reperfusion therapy (i.e., primary percutaneous coronary intervention and fibrinolytic therapy), we did not include patients who underwent rescue percutaneous coronary intervention. Only patients who underwent primary percutaneous coronary intervention without prior administration of fibrinolytic therapy were retained for analysis.

Door-to-open-artery time is difficult to determine accurately, because the exact time when the artery opens is of-

**Table 1:** Sensitivity analyses exploring the effect on door-to-balloon time of excluding various groups of patients

Analysis	Time from arrival at hospital to primary PCI, min	
	On-site primary PCI	Primary PCI after interhospital transfer
All patients included	109	142
Excluding 9 patients with atypical symptoms and 7 with nondiagnostic ECGs	106	139
Excluding 25 patients with contraindications to fibrinolytic therapy	109	146
Excluding 84 patients who required cardiopulmonary resuscitation, intubation or defibrillation before or during primary PCI	102	137
Excluding all patients in the previous 3 rows	102	138

Note: ECG = electrocardiogram, PCI = percutaneous coronary intervention.

ten unknown. This measure is relevant mainly for patients who already have an open artery before any coronary intervention (20% of the patients in our study). In these patients, the median door-to-open-artery time was 113 min (first and third quartile 76, 168) and 149 min (first and third quartile 107, 270) among those who underwent primary percutaneous coronary intervention on site and after interhospital transfer, respectively. These times were similar to the door-to-balloon times that we reported in our study.

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## Hockey playoff noise

In a recent *CMAJ* article, William Hodgetts and Richard Liu examined the risk of hearing loss to people who attended the 2006 Stanley Cup finals in Edmonton.<sup>1</sup> The average noise levels during the 3 games were between 100.7 and 104.1 dB with occasional peaks exceeding 120 dB. Audiometric tests showed a temporal threshold shift of up to 20 dB in 1 ear for 1 subject and of 5–10 dB for the second subject.

Any paper dealing with the risk of

hearing loss from nonoccupational activities involving high noise levels is welcome, because there is a widespread misconception that only workplace noise exposure can be dangerous. In this regard, the authors must be commended. However, caution has to be taken when interpreting the results of the study. The universally accepted limit of exposure to an A-weighted noise level of 85 dB A for 8 hours, which is cited in the *CMAJ* article,<sup>1</sup> is meant for situations where the exposure occurs for many years. In its ISO 1999 standard, the International Organization for Standardization specifies a method to predict hearing loss for exposures for different lengths of time, always measured in terms of years, not hours.<sup>2</sup>

A 3-h exposure to the sound levels measured by Hodgetts and Liu will not harm a person if this exposure is not repeated day after day for many years. However, there is definitely value in recommending the use of hearing protectors even if only for the sake of comfort and ease of communication.

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1. Hodgetts WE, Liu R. Can hockey playoffs harm your hearing? *CMAJ* 2006;175(12):1541-2.
2. International Organization for Standardization. ISO 1999. *Acoustics — determination of noise exposure and estimation of noise-induced hearing impairment*. Geneva (Switzerland): The Organization; 1990.

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## Corrections

There was an error in a recent news article concerning access to drugs in the developing world.<sup>1</sup> The Grand Challenges in Global Health Program is run by the Bill and Melinda Gates Foundation, while Universities Allied for Essential Medicines focuses on the role that universities play in ensuring global access. *CMAJ* apologizes for any inconvenience this error may have caused.

#### REFERENCE

1. Silversides, A. Students, scientists push for access to drugs in developing world. *CMAJ* 2007;176(7):914-5.

DOI:10.1503/cmaj.070502

A name was inadvertently misspelled in a Mar. 13, 2007, obituary.<sup>1</sup> The correct name is Enzo Ugo Sivilotti. We apologize for our error.

#### REFERENCE

1. Deaths. *CMAJ* 2007;176(6):895.

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In our online edition of the March 27 issue of *CMAJ*, the first author's affiliation is listed incorrectly as Department of Radiology Oncology, whereas it should read Department of Radiation Oncology, as it does in the print version.<sup>1</sup>

#### REFERENCE

1. Fairchild A, Janoski M, Dundas G. Sister Mary Joseph's nodule. *CMAJ* 2007;176(7):929-30.

DOI:10.1503/cmaj.070504